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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/004,523	11/01/2001	Alan C. Janos	01-SM5-423 (ATI-0008)	4001

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EXAMINER

A, MINH D

ART UNIT	PAPER NUMBER
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2821

DATE MAILED: 01/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/004,523

Applicant(s)

JANOS ET AL.

Examiner

Minh D A

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AW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-16, 18-27 and 29-36 is/are rejected.
- 7) ☒ Claim(s) 4, 5, 17 and 28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3, 9, 11, 14, 16, 19-20, 25-26 are rejected under 35 U.S.C. 102(b) as being unpatentable by Masuda et al (US 4,922,099).

Regarding claims 1 and 25, Masuda discloses the electric field device comprises an open end cylindrical body (96) having a gas inlet (89) at one end, and an outlet (95) at an other end and at least conductive (66 or 67 or 68) secured to the body (96) and positioned to enhance an applied electric field. See figures 19-22, col.15, lines 4-68, col.16, lines 1-53.

Regarding claim 3, Masuda discloses the portion of the conductive fiber (66 or 67 or 68) is in contact with the body (96). See figures 19-22.

Regarding claims 9, 16, Masuda discloses the conductive fibers (66-68) having the material selected from carbon. See col.4, lines 22-49.

Regarding claim 14, Masuda discloses the electric field device comprises an open end cylindrical body (96) having a gas inlet (89) at one end, and an outlet (95) at an other end and at least conductive (66 or 67 or 68) secured to the body (96) and positioned to enhance an applied electric field and the energy source ((70). See figures 19-22, col.15, lines 4-68, col.16, lines 1-53.

Regarding claims 11 and 19, Masuda discloses the conductive fiber (66-67) securing to an inner surface of the plasma tube (96). See figures 19-22.

Regarding claims 20 and 26, Masuda discloses the light source (19), wherein radiation emitted from the light source (70) is focused at the point within the plasma tube (96). See figures 19-22.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 8, 10, 12-13, 15, 18, 20-24, 27 and 29-36 are rejected with the best understood under 35 U.S.C. 103(a) as being unpatentable over by Masuda et al (US 4,922,099).

Regarding claims 2, 8, 10, Masuda discloses the claimed invention except for the protective coating or the group of sapphire, quartz, alumina coated quartz and combinations comprising at least one the materials or the conductive fiber is the platinum coated silicon carbide fiber or the dielectric material is silicon dioxide or the protective coating having the dielectric material. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the protective coating or the group of sapphire, quartz, alumina coated quartz and combinations comprising at least one the materials or the platinum coated silicon carbide fiber or

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silicon dioxide or dielectric material, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice.

Regarding claims 6-7, 13, 22 and 30, Masuda discloses the claimed invention except for at least one fiber has a thickness less than about 100 microns or the length of less than about 10 millimeters or the length of about 3 millimeters to about 5 millimeter. It would have been an obvious matter of design choice to have the at least one fiber has a thickness less than about 100 microns or the length of less than about 10 millimeters or the length of about 3 millimeters to about 5 millimeter, since applicant has not disclosed that thickness less than about 100 microns or the length of less than about 10 millimeters or the length of about 3 millimeters to about 5 millimeter solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with at least one fiber has a thickness less than about 100 microns or the length of less than about 10 millimeters or the length of about 3 millimeters to about 5 millimeter.

Regarding claims 12, 21 and 27, Masuda discloses the claimed invention except for the energy source is selected from the group consisting of microwave energy, radio frequency energy, and a combination comprising at least one of the foregoing energy sources or the conductive fiber is secured to the body at an angle substantially parallel to a length of the tube or ultraviolet radiation. It would have been an obvious matter of design choice to have the energy source is selected from the group consisting of microwave energy, radio frequency energy, and a combination comprising at least one

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of the foregoing energy sources or the conductive fiber is secured to the body at an angle substantially parallel to a length of the tube or ultraviolet radiation, since applicant has not disclosed that the conductive fiber is secured to the body at an angle substantially parallel to a length of the tube or ultraviolet radiation solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with the energy source is selected from the group consisting of microwave energy, radio frequency energy, and a combination comprising at least one of the foregoing energy sources or ultraviolet radiation.

Regarding claims 23, 24 and 29, Masuda discloses the claimed invention except for the at least one fiber is partially aligned with the electric field or at substantially parallel to the applied electric field. It would have been an obvious matter of design choice to the at least one fiber is partially aligned with the electric field or at substantially parallel to the applied electric field, since applicant has not disclosed that the at least one fiber is partially aligned with the electric field or the at least one fiber is at substantially parallel to the applied electric field solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with the at least one fiber is partially aligned with the electric field or the at least one fiber is at substantially parallel to the applied electric field.

Regarding claims 31-36, Masuda discloses the claimed invention except for the gas flows at a pressure less than 1 atmosphere or greater than 1 atmosphere or pressure up to about 5 atmospheres or distance greater than about 3 millimeters. It would have been an obvious matter of design choice to have the gas flows at a

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pressure less than 1 atmosphere or greater than 1 atmosphere or pressure up to about 5 atmospheres or distance greater than about 3 millimeters, since applicant has not disclosed that the gas flows at a pressure less than 1 atmosphere or greater than 1 atmosphere or pressure up to about 5 atmospheres or distance greater than about 3 millimeters solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with the gas flows at a pressure less than 1 atmosphere or greater than 1 atmosphere or pressure up to about 5 atmospheres or distance greater than about 3 millimeters.

Allowable Subject Matter

5. Claims 4-5, 17 and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not teach that a conductive fiber comprises a material selected from the group consisting of tantalum, tungsten, molybdenum, aluminum, carbon, graphite, palladium, gold, copper, silver, platinum, ceramics and composites or compositions comprising at least one of the forgoing material or a conductive fiber is a platinum coated silicon carbide fiber in dependent claims 4-5, 17 and 28.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Love. (US 6,084,348); Boyd et al.(US 5,639,565); Shang et al. (US 5,892,328)-I Ury et al. (US 5,847,517) are cited to show a plasma process and apparatus.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Minh A whose telephone number is (703) 6054247. The examiner can normally be reached on M-F (9:00 -6-00).

If attempts to reach the examiner by telephone is unsuccessful, the examiner's supervisor, Don Wong, can be reached on (703) 308-4856. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and (703) 872-9319 for final communications.

Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center receptionist whose telephone number is (703) 308-0956.

Examiner

Minh A

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01/11/04

Haissa Philogene
Primary Examiner
A.U. 2821
Haissa Philogene